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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,230	12/08/2003	Bishnu P. Gogoi	SC12116ZP	2513
23125 7590 07/26/2007 FREESCALE SEMICONDUCTOR, INC. LAW DEPARTMENT 7700 WEST PARMER LANE MD:TX32/PL02 AUSTIN, TX 78729			EXAMINER ESTRADA, MICHELLE	
			ART UNIT 2823	PAPER NUMBER
			MAIL DATE 07/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/730,230	Applicant(s) GOGOI ET AL.	
	Examiner Michelle Estrada	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☒ Claim(s) 1-11, 14-17, 19-22 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 9-11, 14, 15, 17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Partridge et al. (6,936,491) in view of Razouk et al. (5,911,109).

Re claims 1 and 2, Partridge et al. disclose providing a semiconductor substrate (14); forming a layer over the semiconductor substrate (24), wherein forming the layer over the semiconductor substrate comprises forming a conductive layer; forming an opening within the layer (Fig. 4A)); forming (depositing) an insulating layer (32) over the layer.

Partridge et al. do not disclose that the insulating layer is deposited at approximately atmospheric pressure.

Razouk et al. disclose depositing an insulating layer in a trench at approximately atmospheric pressure that would obviously seal the opening (Col. 1, lines 57-65).

It would have been within the scope of one of ordinary skill in the art to combine the teachings of Partridge et al. and Razouk et al. to enable the insulating layer

formation step of Partridge et al. to be performed according to the teachings of Razouk et al. because one of ordinary skill in the art would have been motivated to look to alternative suitable methods of performing the disclosed insulating layer formation step of Partridge et al. and art recognized suitability for an intended purpose has been recognized to be motivation to combine. See MPEP 2144.07. Furthermore, it ill avoid the presence of voids within the trench fill material and to form a planar surface.

Re claims 4 and 17, Razouk et al. disclose wherein forming the insulating layer further comprises depositing the insulating layer and annealing the insulating layer at approximately atmospheric pressure.

Re claim 9, Razouk et al. disclose wherein annealing comprises reflowing the insulating layer.

Re claim 10, Partridge et al. disclose wherein forming the layer over the semiconductor substrate comprises forming a polysilicon layer (Col. 6, lines 50-53).

Re claims 11, 19 and 20, Razouk et al. disclose wherein forming an insulating layer comprises forming a phosphosilicate glass (PSG) (Col. 1, lines 55-57).

Re claim 14, Razouk et al. disclose providing a semiconductor substrate; forming a sacrificial layer over the semiconductor substrate (106); forming a layer over the sacrificial layer (108); etching the layer to expose a portion of the sacrificial layer; removing the sacrificial layer; forming an opening within the layer (302); forming a material over the opening (802); and sealing the opening with the material, wherein sealing occurs at approximately atmospheric pressure (Col. 1, lines 57-65).

Re claim 15, Razouk et al. disclose wherein forming the material and sealing the opening are performed simultaneously.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 5-8, 16, 21 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Partridge et al in view of Razouk et al. as applied to claims 1, 2, 4, 9-11, 14, 15, 17, 19 and 20 above, and further in view of the following comments.

Re claims 3 and 16, the combination does not disclose wherein the depositing is performed by CVD.

However, the Examiner takes official notice that depositing an insulating layer by CVD is well known in the art at the time of Applicant's invention. It would have been obvious to one of ordinary skill in the art to deposit the insulating layer by CVD to achieve the instant invention.

Re claims 5-8, 21 and 22, Razouk et al. do not specifically disclose a type of annealing process.

The Examiner takes official notice that furnace anneal, localized anneal, annealing in dopant atmosphere and laser anneal are well known in the art at the time

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of Applicant's invention. It would have been obvious to one of ordinary skill in the art to use any of these types of anneal to achieve the instant invention. See Sze, "VLSI Technology", pages 355-362.

Allowable Subject Matter

Claim 23 is allowed.

Claims 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Estrada whose telephone number is 571-272-1858. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2800.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Michelle Estrada", with a stylized flourish at the end.

Michelle Estrada
Primary Examiner
Art Unit 2823

ME
July 13, 2007